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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,172	09/24/2002	Kuo-Kun Tseng	ATCP0008USA	4891

27765 7590 08/29/2006

NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION  
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MERRIFIELD, VA 22116

EXAMINER
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DING, LEIBO

ART UNIT	PAPER NUMBER
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2632

DATE MAILED: 08/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No. 10/065,172	Applicant(s) TSENG ET AL.	
	Examiner Leibo Ding	Art Unit 2632	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 September 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14, 18 and 19 is/are rejected.
- 7) ☒ Claim(s) 15-17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 September 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) *   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) *<br>Paper No(s)/Mail Date <u>10/08/2002</u> . | 6) <input checked="" type="checkbox"/> Other: <u>See Continuation Sheet.</u>            |

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities:

On page 11,

"[0076] Step 102: I

[0077] he receiver 32 ..." should be

"[0076] Step 102:

[0077] The receiver 32 ...".

Appropriate correction is required.

### *Drawings*

2. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to because of lack of label in Figure 1, for example, “audible range” should be labeled for 20a, 20c, and 20e; “silent range” should be labeled for 20b and 20d; “sender” should be labeled for 12; “receiver” should be labeled for 14; and “delay” should be labeled for the shaded blocks. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 4, 5, 6 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 4, applicant sets up the steps (f), (g) and (h) as the invention, but claim 4 is dependent on claim 2 instead of claim 3, so in the flow line of claim 1 → claim 2 → claim 4, we only see steps (a), (b), (c), (f), (g) and (h), steps (d) and (e) are omitted.

Claims 5, 6 and 7 are rejected as their independence of claim 4.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1 – 3, 8 – 14, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 6259677 to Jaswant R. Jain (hereinafter “Jain”) in view of U.S. Patent Number 7085230 to William Christopher Hardy (hereinafter “Hardy”).

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With respect to claims 1 and 2, Jain disclose a method for receiving and playing out real-time packetized data (Abstract, lines 1 – 2), including a packet transmission fixed delay estimator and a packet transmission variable delay estimator (Abstract, lines 3 – 4); both work as the network delay estimator in current application to determine the network delay and network delay variation, and further estimate the playout delay based on the calculation of the output of two estimators by the playout buffer controller (Abstract, lines 7 – 9, col. 6, lines 6 – 13); and playout buffer controller playout the data in the playout buffer according to the playout delay (col. 5, lines 45 – 47).

Jain does not disclose that the method further includes the steps for determining the LMOS and DMOS for a previous packet and calculating an estimated playout delay for a current packet based on the LMOS and DMOS of the previous packet.

Hardy teaches a method for determining what combinations (represents MMOS) of packet loss rate (represents LMOS) and packet delay (represents DMOS) are tolerable where a packet switched telephony service is desired to be perceived to be substantially equivalent to a traditional toll-quality non-packet-switched telephone service (col. 4, lines 25 – 30). This method allows for a correlation between objective measurements (packet loss rate and packet delay) and perceived quality (LMOS, DMOS and MMOS) in the context of a packet-switched communications service for a particular codec scheme (col. 6, lines 42 – 44, and col. 4, lines 34 – 36). In another word, once the codec scheme is determined, the subjective measurements (like LMOS, DMOS and MMOS)

and objective measurements (like packet loss rate and placket delay) of the packet are determined, and the objective measurements can further be used to determine the playout delay (playout quality) with the conjunction of other network statistics (like jitter or variance of delay).

It would have been obvious to a person of the ordinary skill in the art at the time the invention was made to add the method for “determining the correlation between objective measurements and perceived quality in the context of a packet-switched communications service for a particular codec scheme” as taught by Hardy to the method for receiving and playing out real-time packetized data of Jain.

The motivation for doing so would have been to establish the requisite performance of the packet-switched telephony service comparable to the traditional toll-quality circuit-switched telephone service and characterize the requisite performance of the packet-switched communications network in the context of a particular codec scheme (col. 3, lines 60 – 62, and col. 4, lines 1 – 3).

Therefore, it would have been obvious to combine Hardy with Jain to obtain the invention as specified in claims 1 and 2.

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With respect to claim 3, Jain discloses that the current playout delay is determined by the current mean network delay variance (jitter), scaling factor (as constant multiple coefficient  $k$ ) and the previous delay (col. 7, lines 1 – 8).

With respect to claim 8, Jain discloses that the packets contain audio (telephony) (col. 4, lines 45 – 46) and video (col. 4, line 41).

With respect to claim 9, Jain discloses that the playout is for VoIP (col. 1, line 33) and video conference (col. 4, line 41).

With respect to claim 10, Jain discloses that the network is packet-switched network, and implemented by computer connected to the network and either running VoIP software on its microprocessor (col. 4, lines 37 – 45).

With respect to claims 11, 12, 13 and 14, Jain disclose a receiver for receiving and playing out real-time packetized data (Abstract, lines 1 – 2), including a packet transmission fixed delay estimator and a packet transmission variable delay estimator (Abstract, lines 3 – 4); both work as the network delay estimator in current application to determine the network delay and network delay variation, and further estimate the playout delay based on the calculation of the output of two estimators by the playout buffer controller (Abstract, lines 7 – 9, col. 6, lines 6 – 13); and playout buffer controller



playout the data in the playout buffer according to the playout delay to playout device (Figure 5, col. 5, lines 43 – 47, line 60).

Jain does not disclose that the receiver further includes the codec detector for determining the LMOS and DMOS for a previous packet, the MMOS for a current packet, and calculating an estimated playout delay for a current packet based on the LMOS, DMOS of the previous packet and MMOS of the current packet.

Hardy teaches an apparatus for determining what combinations (represents MMOS) of packet loss rate (represents LMOS) and packet delay (represents DMOS) are tolerable where a packet switched telephony service is desired to be perceived to be substantially equivalent to a traditional toll-quality non-packet-switched telephone service, which works as the codec detector (col. 4, lines 25 – 30). This apparatus allows for a correlation between objective measurements (packet loss rate and packet delay) and perceived quality (LMOS, DMOS and MMOS) in the context of a packet-switched communications service for a particular codec scheme (col. 6, lines 42 – 44, and col. 4, lines 34 – 36). And the maximum proportion of MMOS (which is from the given packet loss rate and packet delay) is selected for the determination of the playout delay (Figure 6, step 614 and col. 17, lines 41 – 43). In another word, once the codec scheme is determined, the subjective measurements (like LMOS, DMOS and MMOS) and objective measurements (like packet loss rate and packet delay) of the packet are determined, and the objective measurements can further be used to determine the

playout delay (playout quality) with the conjunction of other network statistics (like jitter or variance of delay).

It would have been obvious to a person of the ordinary skill in the art at the time the invention was made to add the apparatus for “determining the correlation between objective measurements and perceived quality in the context of a packet-switched communications service for a particular codec scheme” as taught by Hardy to the receiver for receiving and playing out real-time packetized data of Jain.

The motivation for doing so would have been to establish the requisite performance of the packet-switched telephony service comparable to the traditional toll-quality circuit-switched telephone service and characterize the requisite performance of the packet-switched communications network in the context of a particular codec scheme (col. 3, lines 60 – 62, and col. 4, lines 1 – 3).

Therefore, it would have been obvious to combine Hardy with Jain to obtain the invention as specified in claims 11, 12, 13 and 14.

With respect to claim 18, Jain discloses that the network is packet-switched network, and implemented by computer connected to the network and either running VoIP software on its microprocessor (col. 4, lines 37 – 45).

With respect to claim 19, Jain discloses that the playout is for VoIP (col. 1, line 33) and video conference (col. 4, line 41).

***Allowable Subject Matter***

8. Claims 4, 5, 6 and 7 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

9. Claims 15, 16 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record, considered individually or in combination, failed to show or suggest a claimed method of adaptive playout, comprising, among other limitations, a novel and unobvious limitations of combining loss mean opinion score (LMOS), delay mean opinion score (DMOS), mean mean opinion score (MMOS) from the codec information with the network delay variance (jitter) to determine the actual playout delay,

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structurally and functionally interconnected with other limitations in a manner as recited in claims 4, 5, 6 and 7.

The prior art of record, considered individually or in combination, failed to show or suggest a claimed playout device of adaptive playout, comprising, among other limitations, a novel and unobvious limitations of combining loss mean opinion score (LMOS), delay mean opinion score (DMOS), mean mean opinion score (MMOS) from the codec information with the network delay variance (jitter) to determine the actual playout delay, structurally and functionally interconnected with other limitations in a manner as recited in claims 15, 16 and 17.

### ***Conclusion***

The prior/related art made of record and not relied upon is considered pertinent to applicant's disclosure.

Smith et al (USP 6862298),

Ghitza et al (USP 6609092),

Lee et al (USP 6490552),

Lee, Dae-Hyun (USPGPUB 2004/0165570),

Goodman, Lee (USPGPUB 2002/0167936),

Tseng et al (USPGPUB 2004/0066751),

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Tseng et al (USPGPUB 2004/0057383),

Narbutt et al, An assessment of the audio codec performance in voice over WLAN (VoWLAN) systems, IEEE, pages 461 – 467, Jul 2005;

Tseng et al, Perceptual codec and interaction aware playout algorithms and quality measurement for VoIP systems, IEEE, pages 297 – 305, Feb 2004;

ITU-T Recommendation P.830 Subjective performance assessment of telephone-band and wideband digital codecs (02/96).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leibo Ding whose telephone number is (571) 270-1137. The examiner can normally be reached on Monday-Friday, 7:30 a.m.--5:00 p.m.,EST.

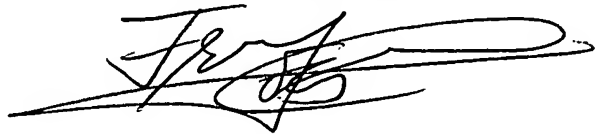
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frantz F. Jules can be reached on (571) 272-6681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LD/  
August 22, 2006

Frantz F. Jules  
Supervisory  
Patent Examiner

A handwritten signature in black ink, appearing to read 'Frantz F. Jules', with a long horizontal flourish extending to the right.

Continuation of Attachment(s) 6). Other: ITU-T Recommendation P.830, Perceptual codec and interaction aware playout algorithms and measurement for VoIP systems, An assessment of the audio codec performance in voice over WLAN (VoWLAN) systems.